

Natural Environments

READ TO DISCOVER

1. What landforms and rivers are found in Russia, Ukraine, and Belarus?
2. What factors influence the region's climates and vegetation?
3. What natural resources does the region have?

WHY IT MATTERS

Russia has large coal deposits, but burning coal causes air pollution. Use cnnfyi.com or other **current events** sources to learn about industries that use coal and efforts to clean up the pollution they cause.

IDENTIFY

Eurasia

DEFINE

icebreakers

taiga

LOCATE

Baltic Sea

Black Sea

Ural Mountains

Locate, continued

Caucasus Mountains

Caspian Sea

Northern European Plain

Crimean Peninsula

Volga River

West Siberian Plain

Central Siberian Plateau

Kamchatka Peninsula

Lake Baikal

Murmansk

Sakhalin Island



Russia, Ukraine, and Belarus: Physical-Political



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KEYWORD: SW3 CH17

FOR: Web sites about
Russia, Ukraine, and Belarus

Landforms and Rivers

Together Russia, Ukraine, and Belarus cover about 12 percent of the world's land area. Russia alone extends more than 6,000 miles (9,600 km) from east to west. The huge country stretches across **Eurasia** from the Baltic Sea and Black Sea to the Pacific Ocean. *Eurasia* is the name given to Europe and Asia when they are considered one landmass or continent. Russia is the world's largest country in area. No other country shares borders with more countries. Much of northern Russia lies above the Arctic Circle.

The Ural Mountains divide the region. Areas west of the Urals—including Ukraine and Belarus—are part of Europe. Those to the east lie in Asia. The part of Russia that is east of the Urals is known as Siberia. The region's remaining three countries—Armenia, Azerbaijan, and Georgia—are in the Caucasus Mountains. These high mountains lie between the Black Sea and the Caspian Sea. The highest point in Europe is on Russia's southern border with Georgia in the Caucasus Mountains. There Mount Elbrus soars to 18,510 feet (5,642 m). An active tectonic zone, the Caucasus region suffers from severe earthquakes.

Ice-age glaciers and long-term erosion shaped the broad plains that are the region's major landforms. Much of the European area shares the Northern European Plain with countries farther west. Thus, the European areas have low elevations. In fact, Belarus has no point over 1,135 feet (346 m) above sea level. Southern Belarus and northwestern Ukraine contain the Pripet Marshes. These marshes make up the largest swamp in Europe. Ukraine's highest point is located where the Carpathian Mountains cross the country's western borders. Peaks on the Crimean Peninsula in southeastern Ukraine, a popular tourist area, are slightly lower.

Russia's Ural Mountains are more like high rolling hills. For this reason, road and rail crossings there need no major tunnels. West of the Urals, the gently rolling terrain of the Volga River basin dominates the heart of Russia. East of the Urals is the thinly populated West Siberian Plain. The Ob River

Plains like the Ukrainian farmland pictured here spread for vast distances across Eurasia.



creates a huge swamp area there. In the Russian Far East, beyond the Central Siberian Plateau, are high snowy ranges. Among these are the active volcanoes of the Kamchatka (kuhm-CHAH-kuh) Peninsula.

The Dnieper, Don, and Volga are three of the largest south-flowing rivers in the region. These important shipping channels also supply water for hydroelectric projects and cities. The major Siberian rivers, such as the Ob, Yenisey, and Lena, flow northward to the Arctic Ocean from mountains in the south. One of the Yenisey's tributaries, the Angara River, flows through southern Siberia from Lake Baikal. Sometimes called the Jewel of Siberia for its beauty, Lake Baikal is the deepest lake in the world. It holds about one fifth of the world's freshwater!

READING CHECK: **Physical Systems** What factors shaped the region's main landform type?

Climates and Vegetation

Russians sometimes joke that winter lasts for 12 months and then summer begins. As you can see on a map, much of the region is in the same latitudes as northern Canada and Alaska. The weather can be harsh. However, the region offers a wealth of resources to those who can brave the elements.

Climates Much of the country lies in the humid continental, subarctic, and tundra climate regions. During the year's five coldest months, rivers and canals throughout the region freeze. In these cold climates a polluted icy fog often hangs over cities during winter. Created by fumes and smoke from cities, this fog is trapped over the cities by the cold air. In the region's northern areas permafrost is widespread and deep. When the permafrost's surface layer melts in summer, buildings tilt, highways buckle, and railroad tracks slip sideways.

Harsh conditions prevail in the area's eastern two thirds. Any ocean winds that might bring moisture and moderate temperatures cannot reach far inland. As a result, parts of the interior are very dry. Siberia's severe winters often bring temperatures below -40°F (-40°C). At one of the coldest places outside of Antarctica, Verkhoyansk in Siberia, the thermometer has reached -90°F (-68°C).

The region's European third has the mildest climates. In addition, the soils there are better for agriculture and human settlement. Moisture from the Atlantic Ocean far to the west brings winter snow and summer rain. In the Russian Far East, coastal areas receive rain-bearing winds from the Pacific Ocean.

The cold climate and small amount of warm coastline reduce Russia's access to the sea. The Arctic Ocean can freeze all



Few creatures can live more than about 400 feet (120 m) below the Black Sea's surface. Too little oxygen and too much hydrogen sulfide create an environment that is poisonous to most life forms, including most bacteria.

Although in much of Siberia snowfall is relatively light, the cold temperatures ensure that the snow stays on the ground for months. The village of Ust'-Anzas, in southern Siberia, lies under a blanket of snow. The sign on the building tells travelers that inside they can buy tickets on Aeroflot, Russia's national airline.



the way south to Russia's northern shores. Ship and barge traffic there requires using **icebreakers**. These are ships that can break up ice in frozen waterways. However, warm waters of the North Atlantic Drift reach around northern Norway to northwestern Russia. There you will find Murmansk, Russia's only large ice-free Arctic port.

Vegetation Differences in climate cause plant life to vary from north to south. Tundra vegetation grows along the northern coast. Low shrubs, mosses, and wildflowers are common there.

To the south is the **taiga**, a forest of mainly evergreen trees that covers half of Russia. Fir, larch, pine, and spruce are common. Farming is limited there because of the short growing season, acidic soils, and permafrost.

Farther south, in Belarus and in European Russia, you will find mixed deciduous-coniferous forest. This type of forest also grows along the coast of the Sea of Japan in the Russian Far East.

Still farther south is the drier grassland known as the steppe. Rich soil called *chernozem* (Russian for "black earth") has built up on the steppe. The grassland, long used for grazing, was plowed under by the 1800s. It has become one of the world's major grain-producing areas. In the past, people of the steppe fleeing invaders found safety in the taiga farther north. These landscapes are often featured in Russian literature.

INTERPRETING THE VISUAL RECORD

The taiga forms a wide band across northern Russia from its western borders to its Pacific coast far to the east. It provides a wealth of forest resources. How is taiga vegetation different from forests farther south?

✓ **READING CHECK:** **Places and Regions** Which vegetation area allows grain production on a large scale and why?



Natural Resources

Russia's forest, energy, and mineral resources are among the richest in the world. Yet much of this wealth was wasted because the government pushed production over conservation. Some of the remaining resources are in remote areas or are of low quality.

The taiga provides wood for building products and paper pulp. Steady logging west of the Ural Mountains has cleared many areas. However, in Siberia the taiga can provide forest resources for a long time to come. Eastern Siberia also has gold and diamond mines.

Coal, hydroelectricity, natural gas, and oil are the region's main energy resources. Huge oil reserves in the Caspian Sea area are being tapped by all the countries around the sea. Oil and gas fields between the Volga River and the Ural Mountains have been crucial to the region's development. They helped the Volga River basin become Russia's industrial heartland. Large reserves east of the Urals in the Ob River basin now supply



most of Russia's oil and gas. The world's largest network of pipelines carries fuel from that area to Moscow, St. Petersburg, and for export to Europe. Sakhalin (sah-kah-LEEN) Island and the Kamchatka Peninsula also have energy resources. Russia's first geothermal power station is in Kamchatka. Geothermal water is put to other uses too, such as heating greenhouses and fish farms.

Russia and Ukraine have many large coal mines. Those coal reserves could last for centuries. The region is also rich in metals, such as copper, gold, iron ore, manganese, nickel, and platinum.

READING CHECK: *Environment and Society* Why is it hard for Russia to profit from some of its natural resources?

INTERPRETING THE VISUAL RECORD

Limited access to the ocean restricts the region's fishing industry. Here fishers net sturgeon for their eggs where the Volga River flows into the Caspian Sea. Served fresh as caviar, the sturgeon's eggs are an expensive delicacy. Sturgeon are now threatened with extinction. **How might the Caspian Sea's location affect the price of caviar?**

Section 1

Review

Identify Eurasia

Define icebreakers, taiga

Working with Sketch Maps On a map of Russia, Ukraine, Belarus, and the Caucasus that you draw or that your teacher provides, label the Baltic Sea, Black Sea, Ural Mountains, Caucasus Mountains, Caspian Sea, Northern European Plain, Crimean Peninsula, Volga River, West Siberian Plain, Central Siberian Plateau, Kamchatka Peninsula, Lake Baikal, and Sakhalin Island. In the margin, identify Russia's only ice-free port.

Reading for the Main Idea

- Physical Systems** Why are earthquakes common in the Caucasus Mountains?
- Environment and Society** What are three of the European region's major south-flowing rivers? What are three functions that they serve?
- Places and Regions** Why is western Russia wetter than most of Siberia?

Critical Thinking

- Environment and Society** Why might developing Siberia's resources be difficult?

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Organizing What You Know

- Create a chart like the one shown below. Use it to describe the tundra, taiga, and steppe regions. Refer to this unit's climate and precipitation maps for more information.

	Climate	Soil conditions	Vegetation
Tundra			
Taiga			
Steppe			